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FURTHER INVESTIGATIONS INTO THE BIOLOGICAL AND CULTURAL AFFINITIES OF THE RI

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INTRODUCTION

Between mid-June and mid-July, 1983, the authors conducted fieldwork on the east coast of central and southern New Ireland, an island province of Papua New Guinea, located northeast of New Britain and mainland New Guinea at about 3°S. latitude and 152°E. longitude. The purpose of the fieldwork was to further investigate reports of an aquatic animal the Barok natives of the area call the Ri. The existence of the reports was first published by the senior author (Wagner) after conducting fieldwork in New Ireland in 1979–80 (see Roy Wagner, 1982, The *Ri*—Unidentified Aquatic Animals of New Ireland, Papua New Guinea, *Cryptozoology*, Vol. 1: 33–39).

The Ri is described as a marine animal with a "fish-like" lower trunk, terminating in a pair of flukes, but with a "human-like" upper trunk and head. The size is about that of a human. The description generally resembles that in reports from many other parts of the world, including Western cultures in Europe. Various medieval writings and artwork in Europe depict such supposed animals, known to us today through folklore as the mermaid.

While it would be unwise to give serious consideration to the possible existence of mermaids as portrayed in Western literature and mythology, it was felt that further investigation of such New Ireland reports was warranted, particularly as the natives claim to distinguish the Ri from other marine mammals, including the Indo-Pacific dugong, which, together with the Caribbean and African manatee, has long been regarded as the animal giving rise to mermaid beliefs. It was thought that the Ri reports might be generated by a marine mammal still unknown to science, the discovery and description of which would be of significant zoological importance.

The expedition program had three general objectives: 1) to conduct further interviewing of the Barok natives to elicit additional details regarding Ri behavior and ecology which might aid in the development of observation

and capture strategies; 2) to locate physical remains of the Ri, which are sometimes said to be caught by accident in fishing nets and eaten by villagers; and 3) to attempt to observe, film, or photograph the animal in its own aquatic environment, and to capture a live specimen if possible.

It was thought that the natives could identify particular beach vantage points. If such observations proved to be successful, attempts would then be made to approach an animal in a small boat. Should the Ri allow itself to be approached in such manner, attempts would then be made to obtain close-up film footage of the animal, both above and below the water surface. A rubber dinghy, snorkeling gear and underwater cameras were included in the expedition's equipment. Ideally, the expedition would capture a live specimen unharmed. Nets could prove useful, but it was recognized that the capture of a specimen would prove to be very difficult—perhaps impossible—on a first expedition, as capture strategies would have to be formulated on site, following a study of the animal's habits. Spearguns or other equipment which could harm or kill such an animal were not included in the expedition's equipment.

Before departure, we consulted with several marine biologists to aid us in a possible on-site identification of the Ri. The consensus by the authorities consulted was that the animal being reported was a mammal. Three kinds of mammals are partly or totally marine: the cetaceans, the sirenians, and the pinnipeds. Various species of cetaceans and one sirenian (the dugong) are found in the New Guinea area. No pinnipeds are known in that part of the world.

Narrative Description

Three expedition members (Wagner, Greenwell and Raymond) initiated work in Kavieng, the capital of New Ireland. Visits were made to provincial officials, including Premier Robert Seeto. The purposes of the expedition were discussed, and the premier offered his encouragement, as well as logistical support in the event that a live specimen was acquired and it proved to be an unknown animal. Provisions were acquired in Kavieng, and a vehicle was rented.

The team drove south for seven hours to Namatanai, the only town in the southern part of the island. The dirt road, the only real one on the island, follows the coastline for about 200 miles. Most villages are located along this road, or between the beach and the road. Contact was first made with Mr. Bernie Gash, manager of the Namatanai Hotel. Mr. Gash manages several coconut plantations in the area, and kindly provided the Ramat Plantation house as a base of operations. The plantation is about 18 miles north of Namatanai, overlooking Ramat Bay, where Wagner had lived in 1979–80.

Initial interviewing was done at the closest village, Korapun, where Wagner had once observed what a native (now deceased) had identified as a Ri. Some villagers knew some English, but all spoke New Guinea pidgin, which Wagner also spoke fluently. Kurus, a local villager who had previously served as Wagner's anthropological informant, was retained to assist the team. Interviewing continued at other villages, and various new Ri accounts, of varying degrees of interest, were obtained. One villager from Giligin (real name!), for example, claimed to have once seen six Ri in line on a reef in Ramat Bay.

It became apparent that villages further north in central New Ireland regard the dugong and the Ri as the same animal, as was determined by Wagner when he uncovered "Ri bones" buried in the sand. In the area of Ramat Bay and further south, however, the distinction becomes clearer, and two separate animals are described in the native accounts.

Of particular interest was the reported instance of a Ri killing in the mid-1970's (see Wagner 1982, above). Villagers at Korapun identified two individuals who had been present when the animal had been hit by an axe, thrown in the back of a truck, and taken down the coast to Namatanai. There it was killed, butchered, and eaten. One of the two witnesses, still living in Namatanai, stated that the animal was not a Ri, which he had never seen, but a dugong. A younger relative of the witness, who had been present at the butchering as a boy, later informed one team member that it was not a dugong at all, but a Ri, and that his uncle ("my father but not my father") knew this; he emphasized that he would never contradict his uncle in front of others. The other witness identified by the Korapun villagers was also located. He was a Western-trained medical orderly (a "doctorboi"), and he stated emphatically that the animal was definitely not a dugong, which he claimed to know well, and was as other villagers described: human-like in the upper torso, with arms closed in or "fused" to the sides of the body, smooth skin below (no scales), and light brown in color.

One may well ask why one witness insisted that the animal eaten was a dungong. The "doctorboi" and other villagers implied that this witness was purposefully giving incorrect information, perhaps related to the fact that he and other inhabitants of Namatanai were originally from the island of Manus, and did not want to be involved in further controversy. A dispute had apparently arisen with villagers at Ramat Bay at the time the animal was taken to Namatanai concerning the appropriateness of killing it, with some villagers demanding that it be set free. This hypothesis was later strengthened during a sing sing—a ceremonial dance—when another villager, a relatively well-educated stranger, approached one of the team and, stating that he knew both witnesses, claimed that the "doctorboi" was the more reliable witness of the two, and that the man from Manus Island had his

own private reasons for denying the animal was a Ri. That is as far as our own inquiries reached in that particular case.

A visit was also made to the head of the Nakela clan, in the village of Pire. The Nakela hold the Ri as their masalai (tutelary spirit), as an animal distinct from the dugong (see Wagner 1982, above). The clan head related an incident, about 40 to 50 years ago, when a mother Ri was killed, and the infant was kept alive a short period before it died. He also stated that the Ri were caught more often in the "old days," before the introduction of modern nets. The old nets, he stated, had bamboo reinforcers and were stronger.

Besides interviewing, the team investigated the reef at Korapun, an area of Ramat Bay where the Ri supposedly entered shallow water at high tide. The villagers spoke of a small opening in the reef through which the Ri enter. One scenario called for the placing of a net at this opening to either trap an animal upon entering or, as the tide receded, upon leaving. An inspection of the passage was necessary, but was not immediately possible because of inclement weather and rough seas.

Another scenario called for a net to be used in one of the small rivers which flow into Ramat Bay. Some villagers talked of Ri entering the rivers at night to fish in very shallow water. Due to the lack of detailed information, this project was not attempted.

A few days after the team's arrival, a Balile villager died of an undetermined malady, and the communal "men's house" was consequently burned down. These were serious matters, which necessitated a postponement of overt expedition activities. Most local people, and the expedition members, participated in the subsequent funeral activities. This was followed the next day by a mortuary pig feast, which included lengthy Barok debates concerning protocol and inheritance.

Following these functions, and as the weather cleared, work at Korapun continued. The passage in the reef was located with the help of Kurus. It was, indeed, as the natives had described, just wide enough for a small marine mammal (or human, as we determined) to negotiate underwater. A 100-foot-long net was acquired in Namatanai, but difficulties arose in conceptualizing a method of installing it at the head of the passage; the continual battering of the waves would probably render any scheme ineffective, and possibly dangerous to any animal which might become entangled in the net.

In the meantime, the team was informed by a villager that Ri were being sighted almost daily at a village named Nokon, about 50 road miles to the south. With a lack of information on current sightings in Ramat Bay, the team proceeded south to Nokon, which is located on Elizabeth Bay, on the western side of Cape Matanatamberan (Fig. 1). This peninsula, the site of extensive military activity by Japanese forces during World War II, is primarily grassland, and it proved to be very difficult to negotiate in a vehicle.

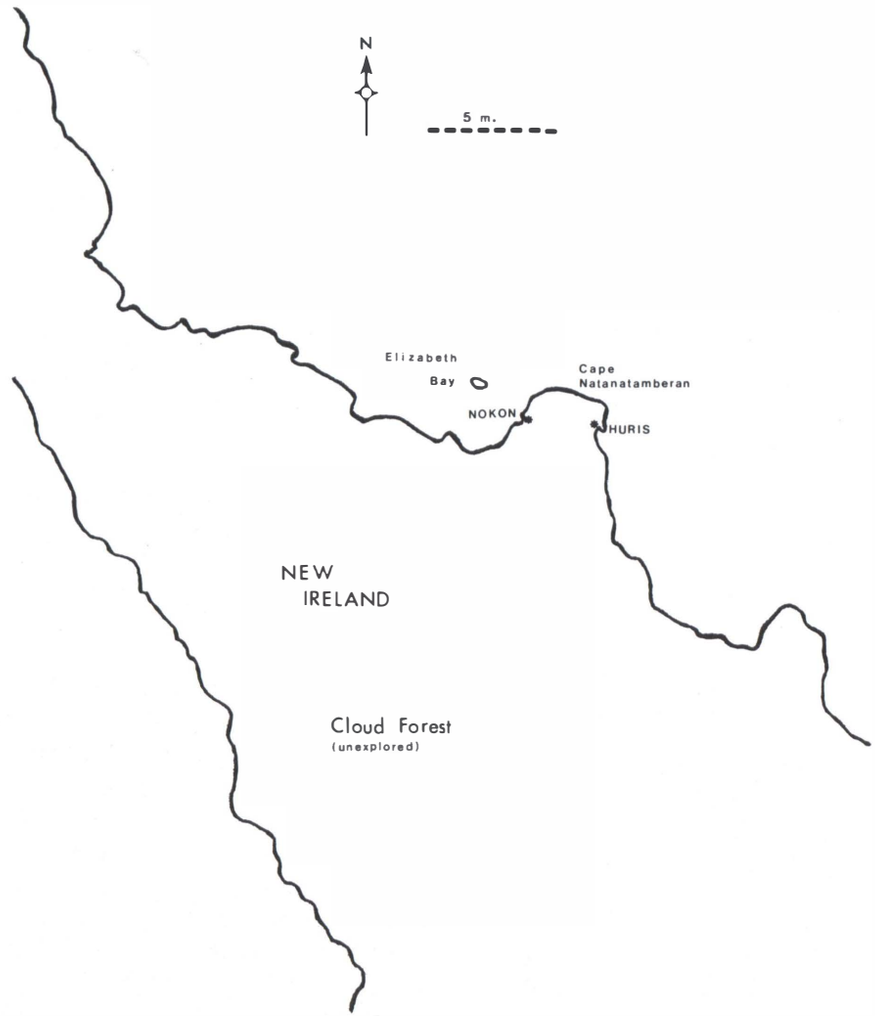

FIG. 1.—Location of Nokon, a Susurunga village, in Elizabeth Bay.

Nokon is populated by Susurunga people, and although they describe the same sort of animal as the Barok, they refer to it as Ilkai (the "k" here is a glottal consonant). The Ilkai (like the Ri) is described as having a human-like upper torso and head, with the eyes set to the front of the head. The mouth protrudes and is "peculiar." The arms are "fused" to the side of the body, and the pseudo-hands serve as flippers. The legs are fused, one across the other, terminating in flippers instead of feet, which provide aquatic propulsion. When pressed on the claim that they have eaten Ilkai, which

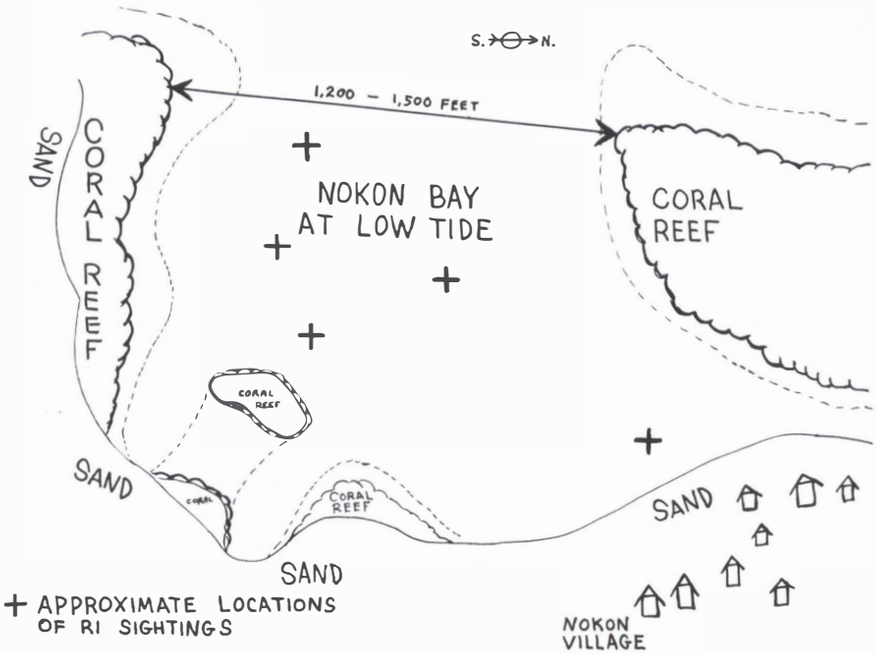

FIG. 2.—Field sketch of Nokon Bay at low tide, indicating the locations of Ri sightings.

they believe have human affinities, several villagers conceded that the Ilkai is really "not man," but "like man." We were informed that an Ilkai could be seen almost daily at dawn and dusk in their inlet (which we named Nokon Bay), so we decided to stay the night and observe early in the morning.

At dawn on July 5, 1983, we proceeded to the beach. Raymond stayed at the northern end of the bay (which is about 1,500 feet across) near the village, while Wagner and Greenwell walked down to the southern end of the bay and onto a reef, from which they surveyed the bay with binoculars (Fig. 2). Raymond almost immediately observed an unidentified animal enter shallow water about 100 feet from the village shore. It swam rapidly, breaking the surface with its back, but showed no dorsal fin. Its color was described by Raymond as light brown. Neither head nor tail was visible. Fish were seen to jump from the water nearby, as if avoiding capture. This observation lasted about 20 minutes, until the animal swam away. Because of the low light conditions and the speed of the animal, the photographs taken by Raymond show nothing of scientific interest.

About half an hour later, Wagner and Greenwell, who were still unaware of the sighting by Raymond, were called back from the reef to the southern end of the bay by some shouting boys. The Ilkai was then observed from

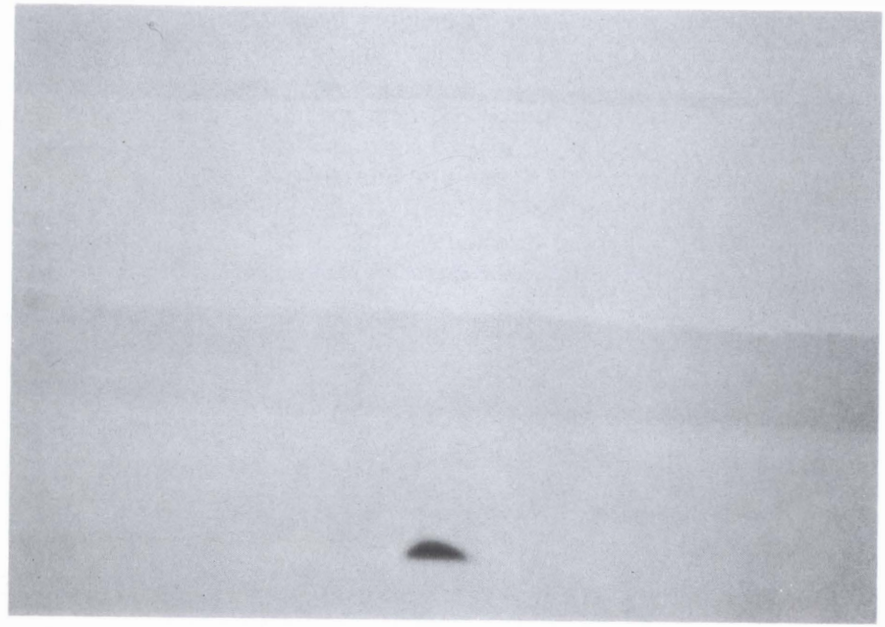

FIG. 3.—Photograph of the Ri, known locally as Ilkai, rolling at the surface. Surfacings occurred about every ten minutes, and lasted for less than two seconds.

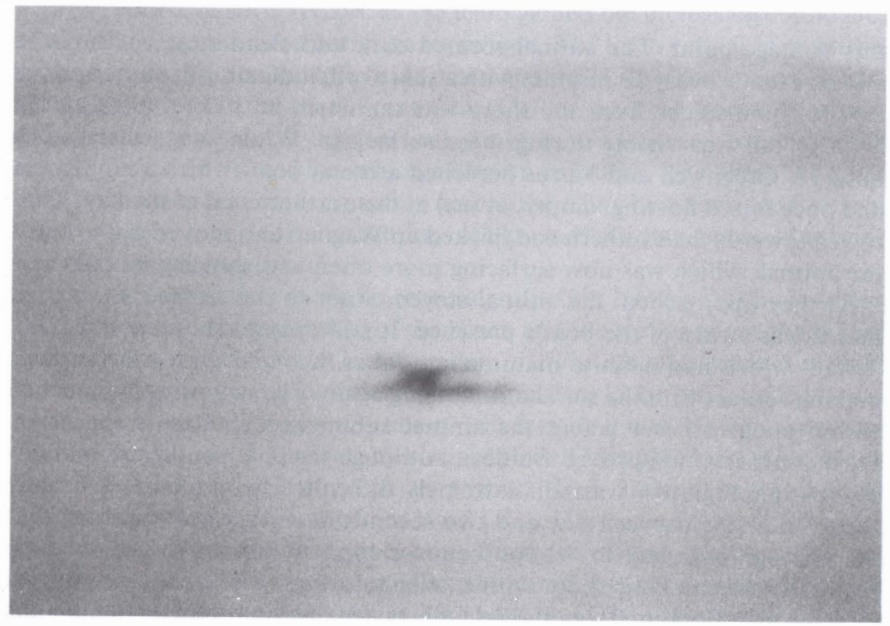

FIG. 4.—Photograph of the Ri's tail, which hovered above the water when approached by a boat.

FIG. 5.—Net placed in Nokon Bay in an attempt to capture a Ri, with no results.

this vantage point. The animal seemed dark and slender, and it surfaced almost exactly every 10 minutes with a sharp roll, indicating extreme vertical flexure. Its distance from the shore was estimated at 300 to 400 feet. No head or tail was visible during these surfacings. While Wagner stayed to observe, Greenwell and Kurus launched a metal boat (which the villagers had once found floating, empty, at sea) at the northern end of the bay. They rowed towards the southern end, picked up Wagner, and moved out towards the animal, which was now surfacing more often and showing its tail.

As they approached, the animal stayed closer to the surface. It was felt that it was aware of the boat's presence. It still did not show its head, but its tail, which had definite mammalian flukes, hovered above the surface, making contact with the surface, and rising again. The witnesses approached within about 50 feet before the animal submerged without reappearing. Further observation proved fruitless. Although the light conditions had improved, photography was still extremely difficult. The animal was usually only visible for between one and two seconds at the surface, meaning that the photographer had to "shoot from the hip." When on shore, the time required to frame and shoot with a telephoto lens was usually more than the time that the animal was visible. Only one of the shore-based photographs caught the animal rolling (Fig. 3). In the boat, the photographer had to

contend with the additional problem of small waves rocking the vessel. Nevertheless, an out-of-focus photograph of the tail was obtained (Fig. 4). No movie film was exposed.

After the sightings, the team members returned to Ramat Bay, where Von Nieda had arrived from California to join them. They then attended the long-awaited Barok sing sing, and returned to Nokon with more provisions and equipment. Despite many hours of vigil, no further significant sightings were made. It appeared that, while team members had positioned themselves at different parts of the bay at dawn and dusk with negative results, villagers were, in fact, observing the animal from time to time during their routine activities, without informing the team members. This occurred on at least two occasions, and served as a reflection of the casual, non-metaphysical attitude they hold toward the Ilkai, and the New Ireland cultural trait of not volunteering information that is not specifically requested.

On another occasion, two easily identifiable dolphins were observed entering the bay (with a behavior and visible morphology quite different from the Ilkai), and one of the team (Greenwell) approached some villagers and excitedly pointed to the cetaceans, exclaiming "Ilkai! Ilkai!" This was done purposefully to determine if the villagers would refer to any marine mammal as an Ilkai in order to please the Western visitor. The villagers simply stated that the animals were dolphins, not Ilkai, strengthening the hypothesis that they know the difference.

In the course of several days, as the team gained the increasing confidence of the villagers, new information came to light. The team was taken to Huris, a Susurunga village on the other side of the peninsula. An Ilkai had reportedly been caught and eaten there some years before, and the bones were supposedly still there. Huris villagers took the team to a large tree around which lay the bones of many pigs, which villagers consume. The Ilkai had once hung from a tree branch, but a search among the many bones proved fruitless. Other villagers reported daily sightings of Ilkai in Huris Bay, but no observing was done by the team.

An attempt was then made to capture an Ilkai in Nokon Bay by lowering a net between the northern end of the beach and the reef opposite the village (near the Raymond sighting location) (Fig. 5). The net was checked at night to ensure that any captured marine mammals could be safeguarded or released unharmed. The net was about 120 feet long and 10 feet wide, and was weighted down at one end by an unexploded Japanese land mine which the villagers occasionally use as an anchor. (New Ireland still has much Japanese military equipment from World War II scattered about its beaches and jungles.) Numerous fish, including three reef sharks, were caught, but no mammals. Snorkeling was conducted around the bay's reefs, and about the reef off an island 2 miles out in Elizabeth Bay. The variety and numbers of coral and fish species were remarkable, and marine productivity seemed

high. Other dolphins were also observed, but they were easily identifiable for what they were. Operations were then terminated at Nokon, and the team returned to Namatanai and Ramat Bay.

Upon returning to the Ramat Plantation, on July 12, 1983, two local Barok men appeared at the plantation house late in the afternoon, stating that a Ri was being observed very close to shore in the small inlet below. We immediately went down to observe, and two team members (Wagner and Greenwell) saw the animal rolling at the surface on the other side of the inlet (about 500 feet distant) on two separate occasions. It appeared to be the same kind of animal seen previously at Nokon. The roll observed by Wagner was in clear sunlight, and he described the animal's color as tan to light green. Further observing took place in the inlet for the two days prior to our departure, with no additional sightings.

Results

The expedition spent almost a full month visiting villages and communities in central-southern New Ireland, and succeeded in two of its objectives: 1) it gained further information on the Ri (or Ilkai) from the aboriginal peoples; and 2) it had direct visual contact with the Ri, or at least with an animal villagers identified as the Ri (or Ilkai), and was able to photograph (but not film) it. The expedition failed to locate tissue or osteological remains, and also failed to capture a live specimen.

Capturing a Ri alive would require considerable effort, and involve a substantial expenditure of funds. Before such a project is undertaken, there would have to be a fairly high probability that the animal involved is not a species already scientifically recognized. The descriptions given by the natives are in no way similar to known species of marine mammals. Nevertheless, the question arises as to whether they are reporting an *unknown* animal, even if the descriptions are embellished, or a *known* animal which the natives have completely metamorphosed into their own version of the mermaid. At this time, there is no way to conclusively answer this question.

As to the animal the team members saw, which the natives claim was a Ri (or Ilkai), not enough of the animal was seen to support or negate the native descriptions. Even so, the various marine mammalogists consulted have been unable to identify the animal seen and photographed. One of us (Greenwell) visited the Hawaii Laboratory of the Naval Ocean Systems Center soon after the sightings, and observed various marine mammals maintained there by the U.S. Navy; none resembled the New Ireland animal, nor were the descriptions or photographs immediately identifiable (Peter Schroeder, personal communication).

It has been speculated that the animal we saw was a dugong, but certain evidence makes this unlikely. The Indo-Pacific dugong (*Dugong dugon*), together with three species of manatee, in the Caribbean, the Amazon, and

FIG. 6.—Sketch of typical dugong roll at the surface, based on Anderson and Birtles (1978). Compare with typical Ri roll in Fig. 3.

West Africa, comprise the living order of sirenians (the only other recognized species being the Steller's sea cow, presumed extinct). The dugong is the only known species of herbivorous animal that lives exclusively in the sea (see George E. Heinsohn, 1972, A Study of Dugongs [*Dugong dugong* (sic)], in Northern Queensland, Australia, *Biological Conservation,* Vol. 4[3]: 205–13). The animal the team members saw, however, appeared to be a predator, although this was a subjective interpretation based on its locomotion and predator avoidance behavior by nearby fish.

Although faster than the manatee, the dugong is a relatively slow mover when compared, say, to cetaceans. The animal observed by the team, however, moved fairly rapidly. The dugong has a bulky body with a limited degree of vertebral vertical flexure. The animal we observed appeared to have a high degree of vertical flexure. Various typical dugong surfacing behaviors have been identified, the closest to what the team observed being a low-profile roll (length approximately 10 times the height), consistent with more limited vertical flexure (see Paul K. Anderson and Alastair Birtles, 1978, Behavior and Ecology of the Dugong, *Dugong dugon* [Sirenia]: Observations in Shoalwater and Cleveland Bays, Queensland, *Australian Wildlife Research,* Vol. 5: 1–23). This typical dugong roll (Fig. 6) may be compared with the high-profile roll consistently observed by the team (Fig. 3) (length less than four times the height).

Extensive fieldwork has shown that the average duration of submergence for the dugong is about a minute. In 204 timed dives over a month's period, the average duration was just over 65 seconds. The maximum average for 18 dives on one day was 126.1 seconds (see Anderson and Birtles 1978, above). The animal the team observed, however, stayed submerged for periods of about 10 minutes, consistently.

Paul Anderson has examined the photographs taken by the team, and states that there is nothing in the photos themselves that clearly rules out a dugong, although some of the behaviors observed are very un-dugong like (Paul Anderson, personal communication). He also provided one author (Greenwell) with super 8 mm movie film of dugongs surfacing. No morphological or behavioral similarities between the Nokon animal and the animals seen in the movie film (dugongs) were found. It was noted that, on occasion, a dugong would surface with a more pronounced vertical roll, but

this was not a consistent behavior, nor was it rapid. Anderson (personal communication) suggests that dugongs diving in deeper water (about 30 feet) may flex more on their surface rolls, and may also stay submerged for longer periods of time, possibilities which he is currently researching in Australia.

Nevertheless, the rapid movement of the animal, its consistently extended duration of submergence, its consistently extreme vertical flexure, and its apparent predatory behavior lead us to the conclusion that the animal observed and photographed at Nokon was not a dugong.

If known sirenians can be ruled out, and pinnipeds are not known in the northern Australasian region (the animal's morphology and behavior did not resemble a pinniped, either), the cetaceans are the only other candidates. Only two small cetaceans are finless, the right whale dolphin (*Lissodelphis*), represented by two species, and the finless porpoise (*Neophocaena phocaenoides*). The northern right whale dolphin (*L. borealis*) is found in the eastern north Pacific, as far south as California, usually travels in large schools of hundreds or thousands of individuals, and leaps out of the water, exposing all of its body. The lesser-known southern species (*L. peroni*) inhabits the Antarctic Ocean. The right whale dolphin can be eliminated from consideration as a candidate for the Ri (Forrest G. Wood, personal communication).

The only other small, finless cetacean, the finless porpoise (*Neophocaena*), is found in the Indian and Pacific Oceans, from southwest to southeast Asia, and it is conceivable that its range may extend as far as New Guinea and New Ireland. These animals inhabit mangrove estuaries, which is consistent with the New Ireland sighting location, and travel alone or in pairs (see Lyall Watson, 1981, *Sea Guide to Whales of the World,* E. P. Dutton, New York). The flukes, however, are reportedly never visible above the water (see Watson 1981, above), which would rule out this candidate, as do the diving times, which are similar to those of other small cetaceans and sirenians, but unlike those of the New Ireland animal. Intervals between blows are 10 to 20 seconds, with longer dives lasting 40 seconds. In one study, the average of 62 timed dives was 17.5 seconds, and the longest dive recorded was 65 seconds (see Zhou Kaiya, G. Pirelli, and Yuemen Li, 1979, Observations of the Baiji (*Lipotes vexillifer*) and the Finless Porpoise (*Neophocaena asiaeorientalis*) in the Changjiang (Yangtze) River between Nanjing and Taiyangzhou, with Remarks on Some Physiological Adaptations of the Baiji to Its Environment, *Investigations on Cetacea,* Vol. 10: 109–20).

Furthermore, according to published illustrations, this short but bulky animal (1.5 meters in length) has a limited vertical flexure capability, and is reportedly sluggish and slow-moving (see C. A. Gibson-Hall, 1950, The Whales, Porpoises, and Dolphins Known in Sarawak Waters, *Sarawak Museum Journal,* Vol. 5[2]: 288–96). After a review of the pertinent literature, the finless porpoise can also be eliminated as a possible candidate for the Ri (Forrest G. Wood, personal communication).

Having considered all possibilities, the authors have not been able to identify the Ri or Ilkai as part of the known inventory of zoology. None of the marine mammalogists consulted so far are convinced that the animal we observed and photographed is one they are acquainted with. We are therefore left with the tantalizing possibility that the animal we observed is indeed new to science. Whether or not it corresponds to the descriptions given by the Barok and Susurunga natives remains to be seen. But so far, they are the only people who *do* claim to know the animal.

Future Plans

Attempts to identify the Ri or Ilkai as an animal known to zoology, even one outside its normal geographic range, will continue. If such efforts are unsuccessful, a new expedition to conduct further field observations would be warranted. Such an expedition would have to include better equipment, such as a sonar unit, more sophisticated photographic equipment, and possibly a powered boat. Adequate funding would have to be made available. At the same time, due to the disruptive nature of such activities in the local villages, and the confidence which has to be gradually developed with the native people, equipment and personnel would have to be kept to a minimum.

In the meantime, numerous Barok and Susurunga villagers have been alerted to the potential importance of acquiring physical evidence, and have agreed to notify the authors or the proper local authorities if they obtain such evidence in the future.